

Capsule

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THE FIRST IN THE NORTH EAST



REGIONAL SCIENCE CENTRE GUWAHATI

And yet another dream comes true with the establishment of the first Regional Science Centre in North Eastern India. This time it is set up in Guwahati, the nerve-centre of the State of Assam. Since the capital town claims importance as the gateway to North Eastern India, it is expected that this Science Centre, in the future, will play an

effective role in enhancing science museum activities which NCSM is contemplating to launch in the seven states of this region. With the completion of this Centre, however, the last of the projects undertaken by NCSM during the 7th Five Year Plan materialised.

Situated close to the border of the

States of Assam and Meghalaya, the Science Centre nestles in a beautiful natural setting where several other educational and training institutes have thrived, thereby creating an academic environment in the neighbourhood. An abandoned paddy field has been transformed into the Children's Science Park amid which are set about 40 exhibits on physical



sciences. The hemispherical geodesic dome aviary measuring 15 metres in diameter, the unique mammal corner, the enclosure for small birds and the artificial pool for aquatic animals inevitably acquaint the visitors with the symbiotic relationship between human beings and the other animals.

Three acres of grassland dotted with flowering and fruit-bearing trees and bushes, and the outdoor exhibit layout perfectly harmonise with the surrounding landscape. Away from the busy bustling crowds of the town, the place also offers a unique picnic spot for the visitors.

The centre houses its exhibition halls in a two storeyed building having floor-area of 4,000 sq.mts. (43,000 Sq. ft.). The entrance leads to a reception hall where tall exhibits like the Hot Air Balloon and the Lazy Tube make some of the most rewarding spectacles. The reception hall gives way to a spacious hall for accommodating temporary exhibitions. Besides, air-conditioned auditorium with 150 seating capacity, the Creative Ability Centre, the Exhibit Development Centre and the Training Hall are situated on the ground floor.

On the next floor, the visitors first come across the Activity Area for Pre-School Children. Abounding in simple participatory exhibits, this fenced area livens up with playful activities of children who are always under the guidance of the Centre's own education staff. The Ice Cream Parlour for better understanding of shapes and sizes, the hand-operated crane demonstrating the pulley system and the large periscope fully engage the interest of the little ones. A group of children can together convey materials in a number of ways by means of another fascinating exhibit. There is also a messy area where the children take



Top left : Mock-up coal mine.

Above : Children's Science Park with the geodesic dome aviary on the left.

Right : Diorama of Assam forest.

great delight in playing various games with water, sand and soap solution. In the meantime, the tabletop brain-teasers serve as a favourite pastime for the parents waiting for their children.

Importance has been attached to the fact that Nature has extravagantly endowed the North Eastern region with dense forests, rivers, and mineral fuels as well as with various geological characteristics; as a result the theme exhibit is based on 'The Planet Earth'. Exhibits demonstrating natural phenomena like the alternate occurrences of day and night, the change of seasons, the shape of the earth and its magnetic properties and variation in the earth's temperature are rather interesting. The Wave Tank which produces simulated ocean waves, and the river valley system with the hydro-electric power station. The reservoir and the irrigation canal have also been worked out with much care and in great detail.

The typical geographical and geological features of the North Eastern Region find fruitful expressions in the diorama of Assam forests, the mock coal-mine, and in the exhibits on



forest products and mineral fuels. The Earthquake Platform upon which six persons at a time can experience simulated earthquake, and the exhibits on plate tectonics and continental drift have gained new dimensions owing to the fact that Guwahati itself is situated in the seismic zone.

Flora and fauna are an integral part of the earth. They are the planets' most valuable treasures also. Therefore, the theme exhibit most appropriately opens with a microcosm of the pond eco-system, birds and turtles and rabbits, cacti and orchids and buzzing beehives. In the universe explored so far, the earth happens to be the only planet which is teeming with life. A visitor to this Centre cannot but experience this beautiful truth with a renewed interest. Some of the exhibits here are really fraught with the vibrations of life.

Should we not make every effort to keep these vibrations alive?

SCIENCE MUSEUMS IN INDIA

B. M. BIRLA SCIENCE CENTRE, HYDERABAD

The B. M. Birla Science Centre has emerged as a major institution for dissemination of science and scientific awareness. Today it claims attention as a prestigious institution organising educational and research activities as well as national and international symposia in which distinguished academicians and scientists including Nobel Laureates participate.

Among the innovative projects of the Centre, the B. M. Birla Planetarium needs special mention. Being one of the best planetaria in the world, it is drawing thousands of visitors every year. The popular Astro-School introduces school children to the marvels of Astronomy through audio-visual lectures, video films, planetarium sessions, and sky shows. The Astronomy on Wheels programme which includes an Astro Van, out-fitted with a mini planetarium, video and cine projection systems, has been taking basic astronomy education to the rural areas. Astronomy Camps for teachers are also held at the National and States levels.

The most recent event was the inauguration of the Science Museum by the President of India in the middle of March this year.

METHOD OF SCIENCE

Vikram A. Sarabhai Community Science Centre (VAS CSC) in Ahmedabad works for popularisation of science and technology amongst the community, especially school children. Apart from participatory and hands-on exhibits, both indoor and outdoor, and various training programmes for different strata of the people, the Centre's specialisation is in the development of teaching aids and kits.

The Centre has recently developed supplementary materials to the serial named "Method of Science" that has been launched by All India Radio and the National Council for Science and Technology Communication, Department of Science and Technology, Govt. of India for children of the age group 10-14. The project has received a great response throughout the country. It consists of 13 part radio serial on method of science as well as supplementary science wall charts, kits, instruction sheets and low cost toys. The serial is being broadcast from nearly all AIR stations on Sunday morning starting from June 25, 1989. The project



Inaugural speech by Prof. A. K. Sharma, INSA Golden Jubilee Professor.

CALCUTTA AND SCIENCE

Birla Industrial and Technological Museum celebrated 300 years of Calcutta by organizing in collaboration with the National Institute of Science Technology and Development Studies (NISTADS), New Delhi, and the Centre for Studies in Social Sciences, Calcutta, a seminar on 'Calcutta and Science' held in the BITM auditorium from December

21-23, 1989. The seminar which was attended with thirty eminent scholars and experts, was inaugurated by Prof. A. K. Sharma, Golden Jubilee Professor, Indian National Science Academy. The speakers largely spoke on the scope and development of science and technology in the city of Calcutta.

Prof. Sushil K. Mukherjee, ex Vice-Chancellor, University of Calcutta presided over the function.

has a committed audience of more than 1,36,000 children and the pro-

ject material has been developed in 14 major Indian languages.



Governor Shri R. K. Trivedi (centre) having a look at the VAS CSC's science popularisation endeavours. At his left is Ms. Jayashree Mehta, scientist of the VAS CSC and at the right is Shri Kantikeya V. Sarabhai the Chairman of VAS CSC.

Workshop on
Silk Screen Printing
Duration : March 19-29, 1990
Venue : Central Research and Training Laboratory (NCSM), Calcutta.
Organised by :
Indian National Committee for the International Council of Museums (INC-ICOM).



Meeting of the
Indo-US Sub Commission on Education and Culture
Duration : March 29-30, 1990
Venue : New Delhi.



Breaking New Grounds
International Conference on Current Research in Museums Studies
Duration : April 8-11, 1990
Venue : University of Leicester, U.K.
Organised by :
Department of Museum studies, University of Leicester.



Meeting of the
ICOM Committee for Museum of Science and Technology (CIMUSET)
Duration : April 21-25, 1990
Venue : Charlotte, N.C. U.S.A.



State level conference on
Environmental Pollution and Leadership Management
Duration : June 5-6, 1990
Venue : Calcutta
Organised by :
Science Association of Bengal, Calcutta.



Seminar on
Industries and Informatics
Duration : September 17-21, 1990
Venue : Bombay
Organised by :
National Institute for Training in Industrial Engineering, Bombay.



Inauguration of the
National Science Centre, Delhi
September, 1990
Established by :
National Council of Science Museums (NCSM), India.



International Conference on
Computer Communication
Duration : November 5-9, 1990
Venue : New Delhi
Organised by :
4 CMC Limited, New Delhi.

Placed at the newly opened Regional Science Centre in Lucknow, these two exhibits are the playful embodiments of certain principles of Fluidics.

CAPILLARY ACTION

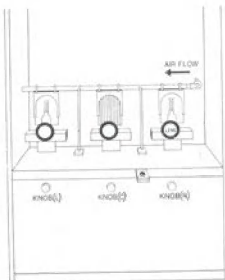
Rotate the knobs one by one, starting with the knob at the left. You find that liquid rises between two parallel plates horizontally upto a certain height all along.

With the central knob you find that the narrower the tube, the more is the rise of liquid.

With the knob at the right, you find that liquid between two plates which are not parallel, rises in the shape of a hyperbolic curve.

Operate the button to push out the liquid from the capillaries by blowing air.

Water molecules are attracted more by glass molecules than by its own molecules. They, therefore, adhere to the side of glass. At the point of contact the liquid tends to rise upward. The liquid rises in the tube/plates till this upward component of



surface tension force is balanced by the weight of the liquid column. In a narrow tube/passage the liquid rise is higher, in order to balance the upward force of surface tension.

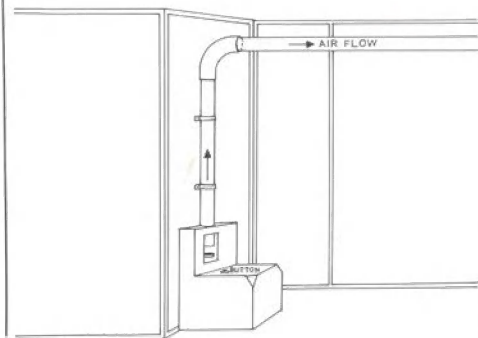
PNEUMATIC CONVEYOR

Take a piece of paper. Write something on it for your friend who is waiting at the other end, and put it in the container.

Put the container inside the tube. Now push the button. The container with your letter rushes to your friend.

This device is called 'Pneumatic Conveyor' in which compressed air is blown into the tube to convey an object.

Now-a-days, this system is being used in industrial units where quick transfer of message, component or material is required.



COUNTRYWIDE CELEBRATION OF THE NATIONAL SCIENCE DAY

February 28, 1928. On that day a new horizon in science was opened in the country with Professor C.V. Raman announcing his Raman Effect. For this he was awarded the Nobel Prize in 1930, the first in science in Asia.

Since 1987, The Government of India has decided to observe the day as National Science Day.

An event of such great magnitude and scientific importance, it is a fitting occasion for popularising science and creating science consciousness in the people. All the science museums and science centres under NCSM across the country celebrated the day as in the previous years, in a well coordinated way, through elaborately planned programmes, with spontaneous involvement of thousands of school children, their teachers, science enthusiasts from science clubs, common people, eminent scientists and educationists of their respective regions. They organised colourful Science March in which thousands of people actively took part with banners, festoons and posters, carrying various appropriate messages of science. Songs were sung, mobile dramas were performed and the processions at their culmination were addressed by eminent scientists and educationists. In-house programmes at different museums and centres comprised science drama, science poetry, sit and draw, sit and write, show and tell, science quiz, costume parade, popular lectures, slide demonstration, astronomy workshop, spectral lab and planetarium shows and many such events.



SCIENCE FAIRS AND CAMPS— Creativity Unleashed

Come winter every year, and it is time for science fairs and camps throughout the country. Eastern India Science camp and Southern India Science Fair, organised by Birla Industrial and Technological Museum in Calcutta and Visvesvaraya Industrial and Technological Museum in Bangalore respectively aim at nurturing the scientific curiosity in the young generation and provide them with platforms to display their innovative exhibits and models.

Eastern India Science Camp this year was held at Salt Lake City, Calcutta during January 24-29, 1990. Participants from schools and science clubs assembled there with models to mark their creative abilities. Exposure-oriented training camps on various topics were organised for observers coming from all over Eastern India. West Bengal State Level Science Fair was also held simultaneously.

Hosted by the Government of Andhra Pradesh, Southern India Science Fair was held at Ananthapur during February 15-20, 1990. 273 students and a large number of teachers from 162 schools of four States and one Union Territory took part in the programme with 355 models.

SCIENCE CAMP ACTIVITY SPREADS IN THE WEST

Nehru Science Centre, Bombay in collaboration with Education Departments of Maharashtra, Madhya Pradesh, Gujarat, Rajasthan, Goa, Daman and Diu and Dadra and Nagar Haveli organised the Second Western India Science Camp during January 9-13, 1990. The theme of the camp was "The Way Things Work Around Us". Dr. A. V. Patankar, Director of the Western Regional Instrumentation Centre in Bombay inaugurated the camp.

80 participants (44 students and 36 teachers) from 31 schools of the States and Union Territories assembled at the camp with 22 models and 11 teaching aids. Participants were also given exposure to various educational programmes like science demonstration lecture, popular science lecture, science quiz contest, sky observation programmes, science film show and spot learning visit to the science park and gallery exhibits of Nehru Science Centre.



Science fairs and camps which all the NCSM units all over the country, organise in a well-coordinated way, has a kind of multitier, pyramid-like system. It starts at district level throughout the country, offering a platform for innumerable young scientists to display their inventive genius. Winners from the district level contests go through state level contests and finally the regional level contests. Various prizes, awards and study scholarships are there to enthuse the winners.

Different moments of expectation and exultation—Bombay, Bangalore and Calcutta (from top).



TECHNIQUEST

It is not just a museum or an exhibition or a demonstration hall. It is not simply an amusement arcade and you do not win points or prizes. Yet, more than one lakh visitors pass through its doors every year making it one of the top tourist attractions in South Wales, U.K.

It is a wonderland of science and technology; a fun filled centre which fascinates and delights people of all age groups, particularly children, with its puzzling pendulum, baffling blower, mystifying mirrors, whisper dishes, gravity well, impossible triangle, computer aided design facilities, and much, much more.

Yet there is another, more serious side to TECHNIQUEST. It stimulates the desire to know more about the physical forces which control our world; it encourages people to learn by touching, observing and working the exhibits. It is a hands-on experience that has captured the imagination of industrialists and academics, scholars and school children alike.



Various fascinating exhibits abound in TECHNIQUEST which can hold in thrall people of all age groups, especially children. The 'Impossible Triangle' (middle left) kept in the visitor entrance area of TECHNIQUEST may be taken as a representative exhibit. Just after you enter TECHNIQUEST, you see yourself on TV screen, and it seems as if you are walking towards a solid triangular object. As you walk further, the illusion is broken and watching the screen, you seem to walk through a triangle. Your entrance is also an exhibit—the Impossible Triangle.

MARYLAND SCIENCE CENTRE, BALTIMORE, USA

Maryland Science Centre is unfailing in rewarding its visitors with unforgettable moments packed with fun and excitement. Exhibits range from those unfolding intricate workings of human memory to those which feature the latest findings and discoveries in space. You can go behind the scenes of a local television programme, find out how TV images appear on the screen and then see yourself on a live TV broadcast! Again, you can compare yourself with a variety of dinosaurs or probe the mysteries of sight, sound, magnetism and light with a dozen of hands-on experiments.

Once you are beneath the star-studded dome of the most fascinating Davis Planetarium, you are transported to a time and place

beyond your imagination. The Planetarium takes you on an imaginary voyage to the planetary engineering projects ten thousand years hence. You can probe the surfaces of Venus and Mars and delve into the noxious clouds of Jupiter, or experience the panoramic vista of a moon base.

Events at Maryland Science Centre are absolutely incredible!



SECOND COMPUTER FAIR IN CALCUTTA

Birsa Industrial and Technological Museum, in collaboration with the State Directorate of School Education organised the second Computer Fair during December 26-31, 1989. The Fair was inaugurated by Shri Virasagar, Chief Executive of DCM Data Products and presided over by Dr. Bimal Sen, Principal of Bengal Engineering College, Howrah. School students and science club members from 60 different institutions in and around Calcutta took part in this fair where they actually worked on computers to develop softwares on Physics, Chemistry, Life Sciences,

Mathematics, Geography, and Literature. Examined by a panel of experts, the winning softwares were awarded various prizes and they were given free of cost to the schools.

Apart from the software development programme, a computer awareness programme was also held simultaneously, for youngsters with plenty of enthusiasm but little knowledge in programming. In addition, audio-visual computer quiz, extempore talk, popular lectures and computer demonstration by leading manufacturers were also held during the fair.



True hands-on experience is what they get at the Computer Fair.

GENETIC ENGINEERING!



THE NEXT

'Our Heritage', a permanent exhibition, highlighting the five millennia of scientific and technological tradition in India is set up in the newly built complex of the National Science Centre in Delhi.

CAPSULE-18 will give you the details.

WE NEED

Editor, CAPSULE, is looking forward to your sending by April 30, 1990 publication materials for the 18th issue of CAPSULE. Please send short notes, photographs, problems, suggestions, cartoons and puzzles.



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